This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

KC
10133

THE

CHILD'S ARITHMETICK,

OR

ELEMENTS OF CALCULATION.

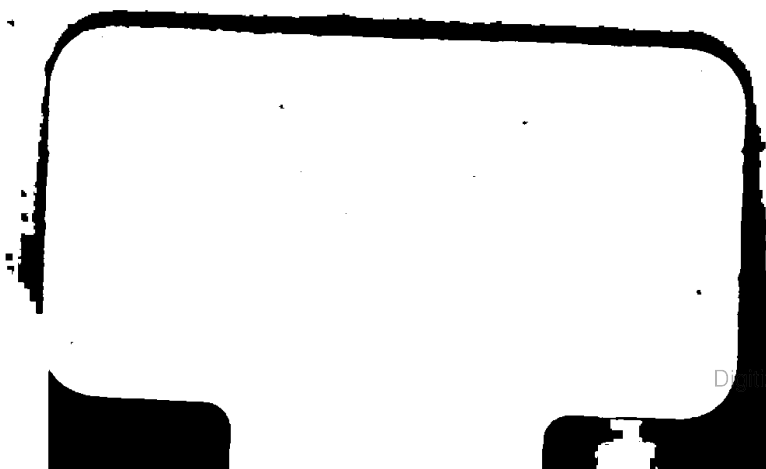
Published by T. Wells, Boston.

Digitized by Google

THEODORE ABBOT,
BOOKSELLER AND BINDER,
No. 390 *Washington-st.*
Opposite Boylston Market,
BOSTON.

1/6 AC 1013 3

THE [illegible] SOCIETY
OF
ANTIQUITY



Digitized by Google

Digitized by Google

Digitized by Google

THE

CHILD'S ARITHMETICK,

OR THE

ELEMENTS OF CALCULATION,

IN THE SPIRIT OF

PESTALOZZI'S METHOD,

FOR THE USE OF CHILDREN BETWEEN THE AGES OF THREE AND SEVEN YEARS.

BY WILLIAM B. FOWLE,
Instructer of the Monitorial School, Boston.

Boston:
PUBLISHED BY THOMAS WELLS,
Union Street and Hanover Street.
1826.

Howe & Norton, Printers.

Digitized by Google

KC 10133

HARVARD UNIVERSITY LIBRARY
CAMBRIDGE 172

District of Massachusetts, *To wit:*

District Clerk's Office.

BE IT REMEMBERED, that on the twenty-sixth day of April, A. D. 1826, in the fiftieth year of the Independence of the United States of America, *William B. Fowle,* of the said District, has deposited in this office the title of a book, the right whereof he claims as Author, in the words following, *to wit:*

"The Child's Arithmetick, or the Elements of Calculation, in the spirit of Pestalozzi's Method, for the use of children between the ages of three and seven years. By William B. Fowle, Instructer of the Monitorial School, Boston."

In Conformity to the act of the Congress of the United States, entitled, "An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned;" and also to an act, entitled, "An act supplementary to an act, entitled, An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned; and extending the benefits thereof to the arts of designing, engraving, and etching historical, and other prints."

JNO. W. DAVIS,

Clerk of the District of Massachusetts.

Digitized by Google

PREFACE.

SOMETHING like this little work, had, for more than a year, been used in manuscript in the Monitorial School, when No. 3 of a useful English publication, called "Hints to Parents," was put into the author's hands. Believing that these "*Hints*," however valuable, would meet with little attention unless presented to the publick in a more practical form, the author was induced, at the request of a friend, to incorporate his own manuscript with what was valuable in the printed "*Hints*," and this Manual is the consequence.

The author hopes that it is not necessary for him to defend the utility or propriety of teaching the elements of Arithmetick to very young children. It is generally conceded that no other exercise affords so much pleasure to them, or has so powerful a tendency to develope their intellectual powers. Children *will* learn something, whether taught or not, and every attempt to prepare suitable exercises for them must be gladly welcomed by every discerning parent and instructer. The author believes that children will never dislike study if they understand what they are required to learn, and have a proper variety of

Digitized by Google

exercises; and he is convinced that ere long the elements of arithmetick will be taught in all our primary schools, as soon as, or even before, reading and spelling. The author's experience has satisfied him that this *may* and *ought* to be done, and the languor and inactivity which pervade most elementary schools, induce him to hope that it *will* be done.

It is perhaps unnecessary to add, that this *Manual* is prepared in the spirit of PESTALOZZI's method, and is intended as an introduction to the more advanced work of COLBURN, which has wrought such a revolution in our schools. Parents who have a just regard for the happiness as well as improvement of their little ones, if they cannot find time to instruct them at home, will do well to see that they are instructed in these or similar elements at school.

WM. B. FOWLE.

Monitorial School, Boston, April, 1826.

Digitized by Google

THE

CHILD'S ARITHMETICK.

VARIOUS articles may be used for counters, and perhaps the greater the variety, the more interest will be excited in the little pupils. But as it is desirable not to confuse their ideas, only one kind of counters should be used *at first*, and the best, on some accounts, are flat pieces of wood about an inch long and half as wide; and as only five will be necessary, they may be made exactly alike, for if the child can distinguish them, when told that the first is *one*, the second *two*, &c. he will think that no other can be called *one*, or *two*, and if you place what was called one in the fifth place, he will still call it one, as he did before.

Digitized by Google

LESSON I.

Having provided the five counters, call the little class around you, and require them to put their hands behind them to prevent their handling the counters unless told to. Then put down *one* and say, there is *one*. Let each child repeat after you, *one*. Then put down another, and say, there is one more, and *one* and *one more* make *two*. Then take *both* up, and putting one down again, ask how many you put down. If no child in the class can say, you must say *one*, and require them to repeat *one*. Then put down another, saying as before, one and one more make two. Let them repeat always. Do not proceed to the *third* counter until they can count two. When you put down the third, say, one and one more are two, and one more makes three. Then take *all* up, and go over the same process again until the children can count three. This will require a great stock of patience, but it is important that the child be advanced

Digitized by Google

no faster than he perfectly comprehends. There is no fear of impatience on the part of the *children*, for, until they feel perfectly acquainted with *three*, they will not be anxious to try a larger number.

Be sure to put down but one at a time, and when it is time to put down a fourth, put down one (and always requiring the class to repeat after you) say one, then putting down another, say, one and one make two—then putting down another say one and one are two, and one more makes three, and one more makes four.

Go through the same process when you put down the fifth. Be particular to name the units or single ones of which the number five is composed. This lesson will require a considerable time to be well understood, but it is better to dwell too long than too short a time upon it. The exercise may be varied by using beans, cents, blocks, fingers, &c. for counters. Indeed it will greatly increase the

Digitized by Google

interest the children take in the exercise if little wooden or pewter men, such as are found at the toy shops be used.

II.

After the children have thus learned readily to count five, put down two counters at once, and ask the first child how many there are down. It is possible that he cannot tell. He must at any rate be required to put his finger upon one and say *one*, (then, putting his finger upon the other, let him say) and one more makes two. It is very important that the child be required to touch each counter.

Then let the next count in the same manner, till each of the class has tried, and if one miscounts, let the next correct him.

When it is evident that they can all count two, put down three counters at once in a line, and let the highest put his finger upon each, saying one and one are two, and one

Digitized by Google

more makes three. Let each try as before, touching and correcting.

So put down four and then five, proceeding carefully in the same manner, and continuing the exercise upon each number until you are satisfied that all the children understand it. Vary the exercise with the different sorts of counters.

III.

Put down the whole five in a line, previously taking care to chalk or ink as many spots as there are counters, that when you take up any counters the spots may assist the child to tell how many are taken up.

When the counters are laid upon the spots above mentioned, take up one and ask how many are gone. Then put it down again and take up two, asking how many are gone as before. Let the child say two ones, or one and one which make two. Then put all down, and take up three, then four, and five in the same manner. To make this lesson

Digitized by Google

more interesting, set up five of the pewter men, and knocking one down, ask how many are down; then set him up and knock down two, and so on.

IV.

This lesson is the reverse of the third. Place the five counters on the five spots, and then taking away one, ask how many are left. Let the child put his finger upon each and count as in Lesson I. Then put all down again and take up two, asking how many are left as before. Put all down before you take up three and four in the same manner. Thus the child will learn to count backward from five to one.

To vary the exercise let the children turn their backs and taking up four, two, one, or three at hazard, let them see which can tell first, how many are gone, and then how many are left. Do this with the little men, knock some down and ask how many are down and how many standing.

Digitized by Google

V.

Put down one counter and then another at some distance. Then ask the child to put them together and tell how many they make.

Put down one and then two more at a distance. Tell the child to put them together and tell how many they make.

Then put down one and three at a distance, then one and four at a distance, and ask the child to put them together and count them as before. If you please you can hold a part in each hand, letting the child take them out and put them together.

Then put down two and two more at a distance and proceed as before. Then *two* with *three* at a distance. Do this until the child is familiar with every combination that can be made with five counters.

To vary the exercise take a finger or two of one hand and a finger or two of the other, and let the child add them together.

Digitized by Google

VI.

Put down one and call it once one. Put down two and ask how many times one you put down. Put down three, and four and five, and ask the same question each time.

Then to make them familiar with this, put down one or three or five or two or four at hazard and ask how many times one are put down.

Do this with beans, cents, men, or any other objects, for the sake of variety.

VII.

Taking fifteen counters place them thus:

*

* *

* * *

* * * *

* * * * *

or thus:

*

* *

* * *

* * * *

* * * * *

Then ask the child to tell which line contains two, one, five, three, or four counters. Then alter the position and putting five in

Digitized by Google

the three's place, and four in the two, ask which line contains one, three, four, two, five.

Then point to a row and ask how many times one are in it.

VIII.

By this time it is expected that the child can readily count five, he will therefore be prepared to proceed to ten in the following manner.

Let the child count five as you put them down one at a time. Then put down one more, and say, five or five times one and one more are six. Let each child count from one to six as in Lesson I.

Let the first child count six again, and then put down one more, and say, six times one and one more make seven. Then make each child count from one to seven.

Do this until every child readily counts seven, and then proceed to eight, then to nine and ten in the same cautious manner.

Digitized by Google

Next, go over the same course with the fingers. Let the children from the first be told that they have five fingers on each hand, for they will be sure not to count the thumb as a finger unless told to do so.

As far as Lesson VII. the exercises can be performed with one hand; it is easy, therefore, to hold up one finger of the other hand and then two, &c. until they can count the fingers on both hands.

For variety you may now take the little men, and laying all flat, let the child stand them up in a line, counting them as he sets them up.

IX.

As soon as the child can readily count from one to ten, put the whole ten counters in a line, taking care, as in Lesson III. to mark spots for the counters to lie upon. Then take up one, and ask how many are left. Then take up another and ask the same question, and so on until all are taken up.

Digitized by Google

Next, place all ten in a row, and taking up one, ask how many are left. Put the counter down again, and taking up two, ask how many are left. Put the two down, and then taking up three, ask the same question. So go on to ten, taking care to lay the whole ten down before you take any more up.

Do this with various counters.

X.

Place the ten counters on the marks described in Lesson III. Let the child whose turn it is to answer, turn round, then take away one or two or three or more from different parts of the line, (say the second and fifth, or first, fourth and ninth,) and then letting the child look on, ask him how many are missing.

Try the above *with the marks* some time, and if the children find it very easy, you may take away the dots and use only the counters. If they are puzzled at this, you must require them to count what are left, and then

Digitized by Google

holding several counters in your hand let them pick out as many as will make up the number ten.

XI.

Put down one and one more at a distance, and ask how many one and one more make. Do the same with one and two placed apart. Then one and three, one and four, to one and nine.

Next put down two and two more apart, and ask how many two ones and two ones more make. Do the same with two and three, two and four, two and five, two and six, two and seven, and two and eight, taking care in your question to ask the child first how many times one there are in each number, and then how many so many times one and so many times one added together amount to.

Then pursuing the same plan, put down three and one apart, and ask how much three ones (or three times one) and one one (or once one) are.

Digitized by Google

Then try three and two, three and three, three and four, three and five, three and six, three and seven.

Then try four and one, four and two, four and three, four and four, four and five, four and six.

Then five and one, five and two, five and three, five and four, five and five.

Then six and one, six and two, six and three, six and four.

Then seven and one, seven and two, seven and three.

Then eight and one, eight and two.

XII.

Put down two counters, and ask how many times one they are. Then say two times one are how many times two?

Put down four, and first asking how many times one they are, separate them into twos, and ask how many times two are four times one.

Digitized by Google

Then take six, eight and ten, and first asking how many ones, separate them into twos and ask how many twos there are.

The *teacher* must separate the counters into twos, and when the child understands what is meant by a *two*, that is a *unity of two*, proceed to Lesson XIII.

XIII.

Put down four, and say how many times one? then how many times two?

Let the *child* separate them into ones and twos.

Put down six and ask how many ones? how many twos? Do the same with eight and ten.

Put down ten and ask how many ones are down and how many twos. Then keep taking away two and asking how many ones are left, and how many twos?

XIV.

Put down six and ask how many ones? how many twos? how many threes?

Digitized by Google

Put down eight and ask how many ones? how many twos? how many fours?

Put down nine and ask how many ones? how many threes?

Put down ten and ask how many ones? how many twos? how many fives?

XV.

Lay down three and ask, how many ones? how many twos? The child must be left to frame his own answer, but must be told finally to say three ones are one two and one one more.

Then ask what part of two ones is one one? Teach him to say, one one is a half of two ones.

Put down five and ask how many ones? how many twos? What part of two ones is one one?

Take seven and ask how many ones? how many twos, &c.

Then take nine and do the same.

Digitized by Google

For further exercise in this lesson, put down the whole ten in a heap, and

2 times 1
3 times 1
4 times 1
5 times 1
6 times 1
7 times 1
8 times 1
9 times 1
10 times 1

} are how many t

Let the child count out as many as you say and then separate them

XVI.

Put down two counters, and say, rated into two numbers or parts two ones. Three separated into bers will make a two and a one.

The teacher must separate and first.

Four, he will say, make two a... two or three and one. Five will make four and one, r three and two.

HARVARD UNIVERSITY LIBRARY
MESSENGER SERVICE

Digitized by Google

After the child seems to understand this, put down two, and ask what two numbers will make two? *Let the child separate them.*

Put down three, and aks what two numbers will make three.

What two numbers will make four? If the child says two and two—ask the next if any other two numbers will make four?

What two numbers will make five? six? seven? eight? nine? ten?

XVII.

Put the ten counters in a heap and ask how many are two counters and one counter? Then one and two? three and one? one and three? four and one? one and four? five and one? one and five? six and one? one and six? seven and one? one and seven? eight and one? one and eight? nine and one? one and nine? Let the child take the counters and find out himself.

Then two and two? two and three? three

Digitized by Google

and two? two and four? four and two? two and five? five and two? two and six? six and two? two and seven? seven and two? two and eight? eight and two?

Then three and three? three and four? four and three? three and five? five and three? three and six? six and three? three and seven? seven and three?

Then four and four? four and five? five and four? four and six? six and four? then five and five?

XVIII.

Put the counters all down and say, two are how many more than one?

Three are how many more than one? than two?

Four are how many more than one? than two? than three?

Five are how many more than one? two? three? four?

Six are how many more than one? two three? four? five?

Digitized by Google

Seven are how many more than one? two? three? four? five? six?

Eight are how many more than one? and so on to seven?

Nine than one? and so on to eight?

Ten than one? and so on to eight?

Then vary the exercise by saying, ten are how many more than nine? than eight? seven? six? five? four? three? two? one?

Nine are how many more than eight? &c. to one.

Do the same with eight, seven, six, five, four, three, and two. It will occupy too much room to write all the questions at full length.

XIX.

Lay the ten counters down and say, one is how many less than two? than three? four? five? six? seven? eight? nine? ten?

Two are how many less than three, four, five, six, seven, eight, nine, ten?.

Digitized by Google

Three are how many less than four, five, six, seven, eight, nine, ten?

Four are how many less than five, six, seven, eight, nine, ten?

Five are how many less than six, seven, eight, nine, ten?

Six are how many less than seven, eight, nine, ten?

Seven are how many less than eight, nine, ten?

Eight are how many less than nine, ten?

Nine are how many less than ten?

XX.

Put down one and say, how many more must I put down to make two? three? four? five? six? seven? eight? nine? ten?

Put down two and ask, how many more must be put down to make three, four, five, six, seven, eight, nine, ten?

Put down three and four, and so to nine, and ask the same questions; that is, how

Digitized by Google

many more must I put down to make the numbers above the number first put down.

Thus far the child has been assisted in every operation by the counters. He will now be prepared to do some very simple calculations without the aid of sensible objects, but he is not to be required to do so unless prepared for it, for the use of counters must be continued until the child is capable of imagining them to be before his eyes.

XXI.

1. How many fingers have you on one hand?

2. How many fingers have you on one hand if you do not count the thumb?

3. How many thumbs have you?

4. How many thumbs and little fingers have you?

5. How many eyes would two little girls have?

Digitized by Google

6. How many hands will two little girls have?

7. How many noses will four girls have?

8. How many shoes will two little boys need?

9. How many shoes does it take to make a pair?

10. How many hands will a pair of gloves cover?

11. How many hands will two pair of gloves cover?

12. How many legs are there to a chair?

13. If the chair had one more leg, how many legs would there be then?

14. How many more legs has a chair than you have?

15. How many legs has a bird?

16. How many more legs must a bird have to have as many as a horse or chair?

17. If you have one cent and I give you two more, how many will you have then?

18. If your father gives you two cents and

Digitized by Google

your mother two more, how many cents will you have?

19. How many legs has an andiron?

20. How many legs have both andirons?

21. If two little girls meet two more little girls, how many will there be in all?

22. If you buy one apple to-day and four to-morrow, how many apples will you have bought in all?

23. If you find two pins to-day and two more to-morrow, how many pins will you have?

24. How many wings have two birds?

25. How many wings have three birds?

26. If you give three cents to me and two to your sister, how many cents will you give away?

27. If you buy two apples with one cent and three apples with another cent, how many apples will you have?

Digitized by Google

XXII.

1. If you have three cents and spend one of them, how many will you have left.

2. If you have three apples and eat two of them, how many will be left?

3. If you have four pins and lose one of them, how many will be left?

4. If you have four cents and give one of them to a poor child, how many will you have left?

5. If there are four lamps burning on the table and you blow out three of them, how many will be left burning?

6. If one leg of a chair be broken, how many legs will it have to stand upon?

7. If you have five beans and all are red but one, how many red beans have you?

8. If you had five beans and dropped two of them, how many did not drop?

9. If five birds are sitting on a tree and a naughty boy throws a stone and kills three of them, how many will be left alive?

Digitized by Google

10. If you have five little brothers and four go to school, how many do not go?

11. If your father gives you five cents and tells you to keep three yourself and give the rest to your brother, how many cents will you have to give him?

12. If a hen has five little chickens and the rats eat up two of them, how many poor little chickens will be left?

XXIII.

1. If I give two little boys two cents a piece, how many cents will both have?

2. If I give you a cent three times, how many cents will you have?

3. A boy bought four apples and gave one cent a piece for them, how many cents did the four apples cost?

4. I have one nail upon each finger, how many nails should I have upon one hand?

5. If I had as many again eyes as I have, how many eyes should I have?

Digitized by Google

6. If I had twice as many hands as I have, how many hands should I have?

7. If you had five times as many tongues as you have, how many tongues would you have then to be noisy with?

8. What animal has as many again feet as you have?

9. I gave a little boy two cents, and instead of thanking me, he said he wanted twice as many as I gave him. How many did he want?

10. How many ear rings must I get for two pair of ears?

XXIV.

1. I wish to divide two apples between two boys, how many will they have a piece?

2. If I have three cents and give them to three little girls, how many cents will each little girl have?

3. If I give four pins to two little girls, how many will each have?

4. If you have five cents and buy five oranges, how much will the oranges cost a piece?

Digitized by Google

5. A little boy walked five miles in five days, how many miles is that for one day?

6. A little girl gives four cents for two oranges, how much did she give a piece for the oranges?

7. Four hands must have how many pair of gloves?

8. How many pair of tongs must be put together to make four legs?

9. How many boxes will hold five cents, if you put only one cent in each box?

10. If I give you one cent and your father gives you three more, how many peaches can you buy at a cent a piece?

XXV.

1. If you have five pins and find one more, how many pins will you have then?

2. If you spend four cents to-day and two more to-morrow, how many cents will you spend in all?

Digitized by Google

3. If three cents are given to you to-day and three more to-morrow, how many cents will you have in all?

4. If a bird has two feet and a dog four, how many feet will both dog and bird have?

5. One book is put upon a pile of five others, how many books will there be then?

6. If a boy who has six marbles finds one more, how many will he have then?

7. If a cake costs five cents and an orange two cents, how many cents will both the cake and orange cost?

8. Four birds alight upon a tree where there are three birds already; how many birds will be on the tree then?

9. Three girls go to play with four other girls, then how many girls are there together?

10. Two beans are put into a box where there were five other beans before. How many beans will there be in all then?

Digitized by Google

XXVI.

1. If you pay seven cents for a doll, and one cent for a needle, how many cents will you spend for the doll and needle?

2. If you loose six pins to-day and two pins to-morrow, how many will you loose on both days?

3. One man gives a poor boy five cents and another man gives him three more cents; how many cents does the poor boy get?

4. A thimble costs four cents and a doll four more, how many cents must a little girl have to buy the doll and thimble too?

5. A poor man has three sons and five daughters, how many children has he?

6. One hen had two little chickens and another hen had six chickens. The hen with two chickens died, and her two little chickens went with the other hen, how many chickens had the hen that was alive after that?

Digitized by Google

XXVII.

1. If seven men are riding in a coach and two more get in, how many will be in the coach then?

2. If six cents be given for a whistle and three cents for a top, how many cents will the whistle and top cost?

3. A man gives five cents to his son and four cents to his daughter; they put all their cents in a heap, and how many do you think there were?

4. A little boy was carrying a basket of apples, and four apples fell through a hole in the bottom of the basket, and five rolled over the top of the basket; how many did the little boy drop?

5. One book cost three cents and another six, how much did both books cost?

6. If you give two cents for some thread and seven cents for some needles and pins, how many cents will the whole cost?

Digitized by Google

XXVIII.

1. If you place one chair by the side of nine chairs, how many chairs will there be?

2. Eight men come into the room where there are two men already, how many chairs must be got that all may sit down?

3. Seven fingers and three fingers make how many fingers?

4. Two little girls wish to buy a doll and one puts in six cents and the other four cents; how much did the doll cost?

5. A little boy spends all his money for two whistles and gives five cents a piece for them; how much did he spend?

6. A little boy is four years old, how old will he be at six years from this time?

7. A little boy has three cents and his sister has seven cents, how many cents have they both?

8. If you have two books and your father buys you eight more, how many books will you then have?

Digitized by Google

XXIX.

1. If you have two pins and loose one of them how many will you have left?

2. If you have 6 cents and spend 2 of them for cake, how many cents will you have left?

3. If you have six cents and give three to a sick woman, how many are left?

4. If you let six beans drop and only find four of them, how many will be lost?

5. If seven books are in a pile and you take one away, how many will be left?

6. A cake and an orange together cost seven cents. If the orange cost two cents, what did the cake cost?

7. Seven birds are on a tree; if three fly away, how many will remain on the tree?

8. Seven little girls were playing together, but four were sent for home, how many were left to play after the four were gone?

9. Seven apples were in a basket and a naughty boy, without leave, ate five of them, how many were not eaten?

Digitized by Google

XXX.

1. If you have eight cents and give one for a needle and the rest for a thimble, how much will the thimble cost?

2. If you have eight pins and two have no heads on them, how many have heads and are good ones?

3. A poor boy has eight cents; a man gave him three of them and a lady the others, now how many did the lady give him?

4. A thimble and a doll together cost eight cents; if the thimble cost four cents, what did the doll cost?

5. A poor man had eight children, but five of them died of a fever; how many are still living?

6. A man had eight bottles of wine but six of the bottles got broken, how many whole bottles were left?

XXXI.

1. Nine persons are riding in a coach, but two of them get out, how many will be left?

Digitized by Google

2. A man has nine children and only three of them are girls, how many boys must there be then?

3. A boy wishes to buy a book, but it costs nine cents, and he has only four; how many more must he get before he can buy the book?

4. Nine apples are in a basket and five of them are very rotten, how many good ones are there?

5. Two books together cost nine cents, but the largest cost six cents; how much did the smallest cost?

6. Nine boys are sliding on the ice and seven of them slip down; how many do not slip down?

XXXII.

1. Ten birds are on a tree and all are yellow but two, how many yellow birds are there?

2. Ten men come into a room where there are but three chairs, how many more chairs will they need?

Digitized by Google

3. A poor little boy had two of his fingers frozen off; how many fingers had he left?

4. A boy buys two play things for ten cents, one of the play things cost five cents; how much did the other cost?

5. A girl is ten years old; how old was she six years ago?

6. A boy and his sister have got ten cents in a little box; the boy owns seven of the cents, how many does his sister own?

7. A boy owns ten picture books and gives two of them to his little sister, how many books has he left?

XXXIII.

1. If you have two cents, how many would you have if you had three times as many?

2. How many feet have three men?

3. How many shoes are there in three pair?

4. If one table has four corners, how many corners will two such tables have?

5. How many wings must four birds have?

Digitized by Google

6. If four boys have two cents a piece, how many cents have they in all?

7. A man bought four oranges and gave two cents a piece, how much did all the oranges cost?

8. Four children have how many ears?

9. How many feet have two horses?

10. How many wheels have two carriages?

11. How many wheels have four chaises?

XXXIV.

1. How many legs have three andirons?

2. If there are five fingers on one of your hands, how many are there on both?

3. Five pair of gloves are how many gloves?

4. Two books cost five cents a piece, how many cents do both cost?

5. How many noses have ten little girls?

6. If every little girl had as many noses as she has eyes, how many noses would five little girls have?

Digitized by Google

7. How many thumbs have five pair of mittens?

8. If one orange costs three cents how many cents will three oranges cost?

9. If you can buy three apples for a cent, how many can you buy for three cents?

10. If you can buy two peaches for a cent, how many peaches can you buy for five cents?

XXXV.

1. A boy buys three pears for six cents; how many cents did he give a piece?

2. Two oranges cost six cents; how many cents is that a piece?

3. A man divides eight cents between four of his children; how many cents do they have a piece?

4. If you give seven cents to seven boys, how many cents will they have each?

5. If three picture books cost nine cents, how many cents is that a piece?

Digitized by Google

6. If I give nine cents to four boys and five girls, how many cents will each of the boys and girls have?

7. Ten apples are equally divided between two children, how many will each child have?

8. How many books at two cents a piece can you buy for ten cents?

9. How many thimbles at five cents a piece can you buy for ten cents?

10. If I give ten cents to five boys and five girls, how many cents will the girls and boys have a piece?

XXXVI.

1. I give one cent for an apple, two cents for an orange, and three cents for a book; how many cents do I spend in all?

2. I give two cents to one boy, and three cents to another, and one cent to another, how many cents do I give away in all?

3. In a box there are three black beans, and three white beans, and one blue bean; how many beans are in the box?

Digitized by Google

4. One book costs three cents, another two cents, and another two cents, what do all three of the books cost?

5. Three little girls buy a doll, one gives two cents, another three cents, and the other four cents; how many cents does the doll cost?

6. If your father gives you four cents and your mother two cents, and you had two before, how many will you have in all?

7. If you have three cents, and your father gives you four more to-day, and five more to-morrow, how many will you have in all?

8. If you pay five cents for a thimble, four cents for some needles, and three cents for some thread, how many cents do the thimble, needles and thread cost?

9. If the tongs has two legs, the andiron three and the chair four, how many legs have all of them?

XXXVII.

1. If you spend four cents to-day, one cent to-morrow and five cents the next day, how many cents will you spend in all?

Digitized by Google

2. If there are three birds on one tree, four birds on another tree, and three more on a fence, how many birds will there be in all?

3. If an orange cost five cents, a peach three cents and an apple one cent, how many cents will the orange, peach and apple cost?

4. If you find four pins to-day, four to-morrow, and two the next day, how many pins will you have in all?

5. If you are so careless as to lose three needles at home, six at school, and one in the street, how many needles have you lost?

6. Four little boys meet five little boys, and they meet one more, now how many little boys are together?

7. If a doll cost three cents, a ring two cents, some beads four cents, and an apple one cent, how many cents do all together cost?

8. A wheelbarrow has one wheel, a chaise has two wheels, and a carriage four wheels, how many wheels have all of them together?

Digitized by Google

PART II.

All the preceding exercises have been performed with ten beans, and before commencing this second part, the teacher must satisfy himself that the child can readily perform all the operations required in the first part. Nothing will be gained by hurrying on before the child is prepared to advance.

In these lessons it will be noticed that we use the term *beans*, almost exclusively; the teacher will substitute any other term, such as counters, blocks, men, &c. if he uses them instead of beans, and it is desirable that he should. In this second part the calculations are carried to twenty, or two tens.

XXXVIII.

Let the child count out ten beans or counters, and then let the teacher lay down one

Digitized by Google

more, saying, ten beans and one bean are how many beans?

Keep the ten beans separate from the one and whatever may be afterwards added. Then go on, saying, ten beans and one more bean are eleven beans, and one more is twelve. Then take all up but ten, and laying down one, let the child say how many that makes. Then lay down another, and let him say how many ten, and one, and one more are. When he can do this readily lay down another, telling him, if he does not know, that ten and one, and one more, and one more are thirteen. Then take all up but ten and put down one at a time, letting the child count as before. In this way proceed to twenty, taking care to keep the first ten separate, and to take all up but the ten every time the new one is added. This will not require so much time and patience as counting the first ten did; for, as the child is acquainted with the mode

Digitized by Google

of adding units together, he has only to learn the names from ten to twenty.

XXXIX.

Still keeping the ten separate, put down two more and ask how many are down? Then take the two up, and put three down, asking the same question, and so continue to do until the second ten are put down and counted by the child.

XL.

Put down the whole twenty, keeping the two tens separate, then taking up one bean or counter, ask how many are left. Then take up another and ask the same question. Continue to take up one more until only the first ten are left.

XLI.

Put down ten and then one more counter, and say, once ten counters and one more counter are how many counters? Then take up the one and putting two down, say, one

Digitized by Google

ten and two more counters are how many counters? Then take up the two and put down three, and so on, putting down each time one more than you take up.

XLII.

Say *ten* counters, and *one* counter more, are how many times one counter?

Ten counters and two counters are how many times one counter?

Ten counters and three counters are how many times one counter?

So go on; ten and four? ten and five? ten and six? ten and seven? ten and eight? ten and nine? ten and ten, are how many times one counter?

XLIII.

Put down eleven counters and put down separately, one, two, three, four, five, six, seven, eight, nine, saying each time, eleven counters and two, three, (or whatever num-

Digitized by Google

ber you put down) counters are how many counters? are how many times one counter?

Put down twelve counters, and then put down separately, one, two, three, and so on to eight, asking the same question as above.

Put down thirteen and then one, two, &c. to seven, and ask as before.

Then put down fourteen, and then from one to six more.

Then fifteen, and from one to five more.

Then sixteen, and from one to four more.

Then seventeen, and from one to three more.

Then eighteen, and from one to two more.

Then nineteen, and one, saying as before, nineteen counters and one counter are how many counters? are how many times one counter?

XLIV.

Put down the whole twenty, and taking two away, ask how many remain? and then, how many you have taken away?

Digitized by Google

Put all down again and take three away, asking the same questions as before.

Put all down and take four away, then five, six, seven, eight, nine, ten, eleven, twelve, thirteen, to nineteen, asking each time, how many are left and how many are taken away.

If necessary the board on which the counters are laid may be dotted as in Lesson VII. that the child may see how many are missing by the vacant dots.

XLV.

Put down nineteen and take up one, asking how many are left and how many missing?

Then take up two, three, four to eighteen, asking both questions each time you take up up any.

Put down eighteen, and pursue the same course as you did with nineteen.

Put down seventeen and do the same.

Then sixteen and fifteen, fourteen, thirteen, twelve and eleven, taking up of each

Digitized by Google

number, and asking how many remain, and how many are missing or taken up?

The child has already performed this operation from ten downwards, and it will be unnecessary here to write it over again.

XLVI.

Lay the beans before the child and say,

2 beans and 9 beans are how many beans?

Let him count out two beans and nine beans separately, and then put them together to find the answer. Do the same in the three following Lessons.

2 beans and 10 beans are how many beans?

3 beans and 8 beans are how many beans?

3 beans and 9 beans are how many beans?

3 beans and 10 beans are how many beans?

4 beans and 7 beans are how many beans?

4 beans and 8 beans are how many beans?

4 beans and 9 beans are how many beans?

4 beans and 10 beans are how many beans?

5 beans and 6 beans are how many beans?

Digitized by Google

5 beans and 7 beans are how many beans?
5 beans and 8 beans are how many beans?
5 beans and 9 beans are how many beans?
5 beans and 10 beans are how many beans?

XLVII.

6 beans and 5 beans are how many beans?
6 beans and 6 beans are how many beans?
6 beans and 7 beans are how many beans?
6 beans and 8 beans are how many beans?
6 beans and 9 beans are how many beans?
6 beans and 10 beans are how many beans?
6 beans and 11 beans are how many beans?
7 beans and 4 beans are how many beans?
7 beans and 5 beans are how many beans?
7 beans and 6 beans are how many beans?
7 beans and 7 beans are how many beans?
7 beans and 8 beans are how many beans?
7 beans and 9 beans are how many beans?
7 beans and 10 beans are how many beans?
8 beans and 3 beans are how many beans?
8 beans and 4 beans are how many beans?

Digitized by Google

8 beans and 5 beans are how many beans?
8 beans and 6 beans are how many beans?
8 beans and 7 beans are how many beans?
8 beans and 8 beans are how many beans?
8 beans and 9 beans are how many beans?
8 beans and 10 beans are how many beans?
8 beans and 11 beans are how many beans?
8 beans and 12 beans are how many beans?

XLVIII.

9 beans and 2 beans are how many beans?
9 beans and 3 beans are how many beans?
9 beans and 4 beans are how many beans?
9 beans and 5 beans are how many beans?
9 beans and 6 beans are how many beans?
9 beans and 7 beans are how many beans?
9 beans and 8 beans are how many beans?
9 beans and 9 beans are how many beans?
9 beans and 10 beans are how many beans?
9 beans and 11 beans are how many beans?
11 beans and 2 beans are how many beans?

Digitized by Google

11 beans and 3 beans are how many beans?
11 beans and 4 beans are how many beans?
11 beans and 5 beans are how many beans?
11 beans and 6 beans are how many beans?
11 beans and 7 beans are how many beans?
11 beans and 8 beans are how many beans?
11 beans and 9 beans are how many beans?
12 beans and 2 beans are how many beans?
12 beans and 3 beans are how many beans?
12 beans and 4 beans are how many beans?
12 beans and 5 beans are how many beans?
12 beans and 6 beans are how many beans?
12 beans and 7 beans are how many beans?
12 beans and 8 beans are how many beans?

XLIX.

13 beans and 2 beans are how many beans?
13 beans and 3 beans are how many beans?
13 beans and 4 beans are how many beans?
13 beans and 5 beans are how many beans?
13 beans and 6 beans are how many beans?
13 beans and 7 beans are how many beans?

Digitized by Google

14 beans and 2 beans are how many beans?
14 beans and 3 beans are how many beans?
14 beans and 4 beans are how many beans?
14 beans and 5 beans are how many beans?
14 beans and 6 beans are how many beans?
15 beans and 2 beans are how many beans?
15 beans and 3 beans are how many beans?
15 beans and 4 beans are how many beans?
15 beans and 5 beans are how many beans?
16 beans and 2 beans are how many beans?
16 beans and 3 beans are how many beans?
16 beans and 4 beans are how many beans?
17 beans and 2 beans are how many beans?
17 beans and 3 beans are how many beans?
18 beans and 2 beans are how many beans?

L.

Let these numbers be counted out and kept separate.

2 beans and 2 beans are how many beans?
3 beans and 3 beans are how many beans?
4 beans and 4 beans are how many beans?

Digitized by Google

5 beans and 5 beans are how many beans?

6 beans and 6 beans are how many beans?

7 beans and 7 beans are how many beans?

8 beans and 8 beans are how many beans?

9 beans and 9 beans are how many beans?

10 beans and 10 beans are how many beans?

2 beans and 2 beans and 2 more beans, that is, three times 2 beans, are how many beans?

Keep adding two more beans until you have put down ten times two. Mind the form of the question.

3 beans and 3 beans and 3 more beans, that is, three times 3 beans, are how many beans?

Keep laying down 3 beans at a time, keeping each three separate until you have put down 6 threes.

4 beans and 4 beans and 4 beans more, that is, 3 times 4 beans, are how many beans?

Continue to lay down four at a time until 5 times 4 are laid down.

Digitized by Google

5 beans and 5 beans and 5 more beans, that is, 3 times 5 beans, are how many beans?

Keep the fives separate, and putting down five more beans, say, four times five beans are how many beans.

Put down six beans and six more separately, ask how many they make, and then put down six more.

LI.

Put down 12 beans and say,

12 beans are how many times 1 bean?
12 beans are how many times 2 beans?
12 beans are how many times 3 beans?
12 beans are how many times 4 beans?
12 beans are how many times 6 beans?

Be careful to require the child to separate the 12 beans into twos, threes, &c. that he many acquire a distinct idea of unities of two, three, &c. as well as the unity of one. Do the same in the following similar exercises.

Put down 14 beans and say,

14 beans are how many times 1 bean?

Digitized by Google

14 beans are how many times 2 beans?
14 beans are how many times 7 beans?
Put down 15 beans, and say,
15 beans are how many times 1 bean?
15 beans are how many times 3 beans?
15 beans are how many times 5 beans?
Put down 16 beans, and say,
16 beans are how many times 1 bean?
16 beans are how many times 2 beans?
16 beans are how many times 4 beans?
16 beans are how many times 6 beans?
Put down 18 beans and say,
18 beans are how many times 1 bean?
18 beans are how many times 2 beans?
18 beans are how many times 3 beans?
18 beans are how many times 6 beans?
Put down 20 beans and say,
20 beans are how many times 1 bean?
20 beans are how many times 2 beans?
20 beans are how many times 4 beans?
20 beans are how many times 5 beans?
20 beans are how many times 10 beans?

Digitized by Google

LII.

3 beans and 4 beans and 5 beans make how many beans in all?

4 beans and 5 beans and 6 beans are how many beans?

5 beans and 6 beans and 7 beans are how many beans?

6 beans and 7 beans and 7 more beans are how many beans?

2 beans and 3 beans and 4 beans and 5 beans make how many beans?

Be careful to give the child time to count the beans in separate parcels, or to count his fingers, if he is capable.

2 beans and 4 beans and 6 beans and 3 beans are how many beans?

2 beans and 5 beans and 4 beans and 6 beans, make how many beans?

4 beans and 6 beans and 8 beans and 2 beans are how many beans.

6 beans and 4 beans and 3 beans and 2 beans and 5 beans are how many beans?

Digitized by Google

7 beans and 6 beans and 3 beans and 4 beans are how many beans.

8 beans and 3 beans and 5 beans and 2 beans are how many beans?

LIII.

5 beans and 4 beans and 3 beans are how many times 2 beans?

3 beans and 4 beans and 5 beans are how many times 3 beans.

6 beans and 5 beans and 3 beans are how many times 2 beans?

5 beans and 6 beans and 5 beans more are how many times 4 beans?

4 beans and 5 beans and 6 beans are how many times 5 beans.

7 beans and 3 beans and 4 beans are how many times 7 beans.

8 beans and 2 beans and 6 beans are how many times 2 beans? are how many times 8 beans?

Digitized by Google

2 beans and 6 beans and 10 beans are how many times 3 beans? are how many times 6 beans?

3 beans and 4 beans and 6 beans and 7 beans are how many times 2 beans? 4 beans? 5 beans? 10 beans?

LIV.

11 beans separated into two numbers will make 1 and 10, 2 and 9, 3 and 8, 4 and 7, 5 and 6.

Let the first child separate the 11 into two numbers, then the next child into two others, and so on as long as they can find a new mode of doing it.

Separate 12 into two numbers or piles.

Separate 13 into two numbers.

Separate 14 into two numbers.

Separate 15 into two numbers.

Separate 16 into two numbers.

Separate 17 into two numbers.

Separate 18 into two numbers.

Separate 19 into two numbers.

Separate 20 into two numbers.

Digitized by Google

Then begin with 11 again and require 11, 12, &c. to 20, to be separated into *three* numbers. Do not hurry over this lesson because it is not written out at full length.

LV.

11 are how many more than 1? 2? 3? 4? 5? 6? 7? 8? 9? 10? Let each question be performed separately.

12 are how many more than 1? 2? 3? 4? 5? 6? 7? 8? 9? 10? 11?

13 are how many more than 1? 2? 3? 4? 5? 6? 7? 8? 9? 10? 11? 12?

14 are how many more than 1? 2? 3? 4? 5? 6? 7? 8? 9? 10? 11? 12? 13?

15 are how many more than 1? 2? 3? 4? 5? 6? 7? 8? 9? 10? 11? 12? 13? 14?

16 are how many more than 1? 2? 3? 4? 5? 6? 7? 8? 9? 10? 11? 12? 13? 14? 15?

17 are how many more than 1? 2? 3? 4? 5? 6? 7? 8? 9? 10? 11? 12? 13? 14? 15? 16?

Digitized by Google

18 are how many more than 1? 2? 3? 4? 5? 6? 7? 8? 9? 10? 11? 12? 13? 14? 15? 16? 17 18?

19 are how many more than 1? 2? 3? 4? 5? 6? 7? 8? 9? 10? 11? 12? 13? 14? 15? 16? 17? 18?

20 are how many more than 1? 2? 3? 4? 5? 6? 7? 8? 9? 10? 11? 12? 13? 14? 15? 16? 17? 18? 19?

This exercise may be varied now by reversing the question, and saying, 11 are how many more than 10? 9? 8? and down to 1.

12 are how many more than 11? 10? &c.

LVI.

1 is how many less than 11? 12? 13? 14? 15? 16? 17? 18? 19? 20?

2 are how many less than 11? 12? 13? 14? 15? 16? 17? 18? 19? 20?

3 are how many less than 11? 12? 13? 14? 15? 16? 17? 18? 19? 20?

Digitized by Google

4 are how many less than 11? 12? 13? 14? 15? 16? 17? 18? 19? 20?

5 are how many less than 11? 12? 13? 14? 15? 16? 17? 18? 19? 20?

6 are how many less than 11? 12? 13? 14? 15? 16? 17? 18? 19? 20?

7 are how many less than 11? 12? 13? 14? 15? 16? 17? 18? 19? 20?

8 are how many less than 11? 12? 13? 14? 15? 16? 17? 18? 19? 20?

9 are how many less than 11? 12? 13? 14? 15? 16? 17? 18? 19? 20?

11 are how many less than 12? 13? 14? 15? 16? 17? 18? 19? 20?

12 are how many less than 13, 14, 15, 16, 17, 18, 19, 20?

13 are how many less than 14, 15, 16, 17, 18, 19, 20?

14 are how many less than 15, 16, 17, 18, 19, 20?

15 are how many less than 16, 17, 18, 19, 20?

Digitized by Google

16 are how many less than 17, 18, 19, 20?
17 are how many less than 18, 19, 20?
18 are how many less than 19, 20?
19 are how many less than 20?

LVII.

1. If six pins be put into a pincushion with five more pins, how many pins will there be in all?

2. If six needles be given to you, and you had six before, how many will you have in all?

3. If six shoes be placed in order by the side of seven other shoes, how many will there be in a row?

4. If six cents be piled up with eight other cents, how many cents will be in the pile?

5. Seven fingers and four fingers are how many more than you have on both hands?

6. A man gives seven dollars for a hat and five dollars for a pair of boots; how many dollars did the hat and boots together cost?

Digitized by Google

7. If seven windows be on one side of a house and eight windows on the other side, how many windows will the house have?

8. If seven squares of glass be broken in one window and nine squares in another, how many squares of glass are broken in both windows?

9. If you have seven books with red backs and ten more with yellow backs, how many books have you in all?

10. If I lose seven cents to day and lost twelve cents yesterday, how many cents have I lost in all?

LVIII.

1. If eight sticks be piled with three sticks, how many sticks will be in the pile?

2. If there are eight children in one family and five children in another family, how many children are in both families?

3. If a man have eight sons and seven daughters, how many children has he?

Digitized by Google

4. If you ride eight miles to-day and nine miles to-morrow, how many miles will you ride in all?

5. If you play eight minutes before school and 12 minutes after school, how many minutes of play time have you?

6. If a pound of sugar cost eight cents and a pound of flour cost eight more cents, how many cents will pay for the flour and sugar?

7. If nine cents be given for a book, and four more for a pencil, how many cents will the book and pencil cost?

8. If a man give one child nine cents and another six cents, how many cents will he give away?

9. If a girl spends nine cents for cake and eight more for candy, how many cents will she spend in all?

10. If it is nine miles to a certain town and you ride 10 miles beyond that town, how many miles will you ride in all?

Digitized by Google

LIX.

1. If one carriage will hold ten persons and another four persons, how many persons will both carriages hold?

2. If one family consists of ten persons, and another of six persons, how many persons are in both families?

3. If a boy catch eleven mice in one trap, and five mice in another, how many mice are caught in both traps?

4. If one kettle holds eleven pails full, and another holds seven pails full, how many pails full will a kettle as big as both of them hold?

5. Twelve large stones, and five small stones make how many stones?

6. If you put thirteen small sticks of wood in a pile with six large sticks, how many sticks of wood will be in the pile?

7. If you have fourteen small pins, and six large ones, how many pins have you?

Digitized by Google

8. If eleven round stones be put into a box with six square stones, how many stones will be in the box?

9. If I plant fifteen white beans and four red beans, how many beans do I plant in all?

10. If twelve little girls wear brass thimbles and six others wear silver thimbles, how many thimbles do all together wear?

LX.

1. If you spend five cents for a book, seven cents for a doll, and eight cents for a whistle, how many cents do all cost?

2. If you gave four cents for a box, six cents for having it painted, and nine cents for a lock and key to it, how much did the whole cost?

3. If you give eight cents to one boy, four cents to another, and seven cents to another, how many cents do you give away in all?

4. In a school six scholars are reading, five are spelling, and seven ciphering, how many scholars are there?

Digitized by Google

5. Nine cats, and seven dogs, and three horses, make how many animals in all?

6. A father gives eight cents to one child, five cents to another, and seven cents to another, how many cents does he give away?

7. A boy has lived seven years in Boston, seven years in Roxbury, and four years in Dorchester, how old is he?

8. I had five cents, and found six more, and had eight given to me, how many have I in all?

9. If there be only nine pear trees, six peach trees, and five apple trees in a garden, how many trees are in the garden?

10. I have spent five dollars for clothes, eight dollars for food, and four dollars for books, how many dollars have I spent in all?

LXI.

1. If I have eleven cents and spend one, how many will be left?

Digitized by Google

2. If a book cost eight cents and you have eleven, how many cents will you have left?

3. If eleven men are overturned in a boat and only two saved, how many will be drowned?

4. A man shot at twelve birds, and killed all but four; how many did he kill?

5. If five dollars are taken out of a pile of eleven dollars, how many will be left in the pile?

6. I lose twelve pins and find six of them; how many are still lost?

7. If you have eleven cents, and buy a book for four cents and some quills for three cents, how many cents will be left?

8. If you have eleven cents, and spend three for cake, and five for candy, how many cents will be left to buy apples with?

9. If five cents be given for tape, and four for thread, and you have twelve cents, how many more cents have you than the tape and thread cost?

Digitized by Google

10. If I had twelve fingers how many more should I have than I have now?

LXII.

1. Fourteen persons are in a room but only five are sitting down, how many are standing?

2. Six persons die out of a family of thirteen persons, how many of the family are living.

3. Fifteen children are in a class, and the seven best are put into a higher class; how many are left behind?

4. If you have fourteen cents, and spend five for raisins, and four for prunes, how many cents will be left?

5. If you have sixteen cents and give six to your brother and five to your sister, how many cents are left for yourself?

6. Fifteen cents are to be laid out in oranges, lemons and apples, three cents for oranges, nine cents for lemons, and the rest

Digitized by Google

for apples, how many cents will be left to buy apples with?

7. If a little boy has thirteen cents given him, and one man gave him five cents, and another three, how many did somebody else give him to make up the fifteen?

8. Sixteen persons are in a room; six are sewing, seven reading, and the rest are doing nothing. How many are doing nothing?

9. Fourteen men agree to ride in three coaches; four get into one carriage and seven into another; how many get into the third?

LXIII.

1. If you buy of a man sixteen cents worth of silk, and give him a twenty cent piece, or a pistareen, how many cents must you have back?

2. If you buy eight cents worth of bread and seven cents worth of milk, and give a pistareen, or twenty cent piece, in payment, how many cents will you have back?

Digitized by Google

3. If you give a man two ten cent pieces, and tell him to give you nine cents worth of sugar, and eight cents worth of salt, and the rest in change, how many cents will he give you in change?

4. A boy is thirteen years old and his sister eighteen, how many years older is the sister than her brother?

5. A man had nineteen miles to walk, but he has walked all but five of them, how many miles has he walked?

6. A man had to ride twenty miles in three hours, the first hour he rode eight miles, the second seven miles, and how many miles did he ride the third hour?

7. A man owes twenty dollars to three men, to the first he owes nine dollars, to the second five dollars, and how many to the third?

8. Twenty pounds of sugar are to be put into four boxes, three of the boxes will hold

Digitized by Google

thirteen pounds, how many pounds must the fourth box hold?

9. Nineteen girls are in three classes, the first class contains seven of them, the second six, and the third how many?

LXIV.

1. If one orange cost six cents, what will two oranges cost?

2. If one lemon cost three cents, what will two lemons cost? what will three cost? what will four cost?

3. If one book cost seven cents, what will two such books cost?

4. If one apple cost two cents, what will six apples cost? what will seven cost?

5. If one quart of beans cost five cents, what will two quarts cost? what will three quarts cost?

6. If one pound of raisins cost ten cents, what will two pounds cost?

Digitized by Google

7. If one ounce of nutmegs cost nine cents, what will two ounces cost?

8. If a piece of tape cost six cents, what will two pieces cost? what will three pieces cost?

9. If a loaf of bread cost five cents, what will two loaves cost? three loaves? four loaves?

10. If an ounce of candy cost four cents, how much will two ounces cost? three ounces? four ounces? five ounces?

11. If two pounds of rice cost nine cents, how much will four pounds cost?

12. If three pounds of flour cost ten cents, what will six pounds cost?

LXV.

1. A man has three children and gives four cents to each of them; how many cents does he give all three?

Digitized by Google

2. A man can walk three miles in an hour; how far can he walk in four hours? five hours? six hours?

3. If one tree bears seven bushels of apples, how many bushels would two such trees bear?

4. I spend five cents for pears and three times as much for peaches; how many cents do I pay for the peaches? How much do I pay for both peaches and pears?

5. If your uncle and aunt and cousin each give you six cents, how many cents will you have?

6. If an apple has two halves, how many halves will two apples have? how many halves will three apples have? four apples? five? six? seven? eight? nine? ten?

7. How many quarters has an apple? how many quarters have two apples? three apples? four? five?

8. If you cut an apple in halves, and then cut the halves in two, how many pieces will there be? What will the four pieces be called?

Digitized by Google

If these four quarters be cut in two, how many pieces will there be?

It is desirable to have the three last sums explained by cutting up an apple before the eyes of the children.

LXVI.

1. Divide twelve apples between two boys and how many will each boy have?

2. Divide twelve apples between three boys and how many will each boy have?

3. Divide twelve apples between four girls and how many will each have?

4. Divide fourteen apples between two boys and how many will each have?

5. A man divides 14 apples between 7 of his children, how many will they have apiece?

6. Sixteen cents were given to two poor boys, how many cents is that for each boy?

7. Sixteen pounds of butter are put into four boxes, how many pounds will be in each box, if each contains the same number of pounds?

Digitized by Google

8. I bought four books for sixteen cents, how much is that for one book?

9. I sold eight quills for sixteen cents; how much was that apiece?

10. Two loaves of bread cost eighteen cents; how much did one loaf cost at that rate?

11. Three books cost eighteen cents; how much did one cost at that rate? how much did two cost?

12. Eighteen persons are in nine chaises; how many persons will be in each chaise?

13. If three boys ride in one chaise, how many chaises will eighteen boys fill?

LXVII.

1. If twenty men ride in two coaches, how many will be in each coach?

2. If a man pay twenty cents for some apples which are two cents apiece, how many apples will the twenty cents buy?

Digitized by Google

3. Twenty cents are put into four equal piles, how many cents are there in each pile?

4. Twenty cents are put into five equal piles, how many cents must be in each pile?

5. Your brother has twelve apples and gives you half of them, how many does he give you?

6. I owe a boy fourteen cents and pay him half of what I owe him, how many do I pay him?

7. Sixteen boys are going to take a sail, half get into one boat and half into another; how many boys are in each boat?

8. I gave eight boys half of an orange a piece; how many oranges did it take?

9. To give eight boys a quarter of an orange apiece, how many oranges will it take?

10. Eight half dollars are how many whole dollars?

11. Eight quarters of a dollar make how many whole dollars?

Digitized by Google

12. Three whole dollars are how many quarters of a dollar? how many halves?

LXVIII.

1. Eleven apples divided between two boys will give them how many apiece?

The child may be puzzled; therefore, say, each may have five whole ones, and then there will be one whole one left to be divided between them. One apple divided between two boys will give each a half of an apple, so that each boy will have five apples and a half. It is best to procure an apple and cut it up and then save it to illustrate question sixth of this lesson.

2. If thirteen oranges be divided between two boys, how many will each boy have?

3. If fifteen oranges be put into two baskets, how many will there be in each basket?

4. If seventeen dollars are given for two barrels of flour, how many dollars is that for one barrel?

Digitized by Google

5. Of nineteen shoes how many pairs can you make? What part of a pair is the odd shoe?

6. If thirteen apples be divided between four boys, how many apples will each have?

The child will find that each boy may have three whole apples; then say, one apple is left, and this is to be divided between the four boys. An apple cut into four parts will allow a quarter to each boy, and each boy will have three whole apples, and one quarter of an apple.

7. Divide fourteen apples between four girls.

The two odd apples must be equally divided between the four girls. One apple divided between four girls will give a quarter of an apple to each. Two apples divided among four girls will give each two quarters. Each girl then has three whole apples and two quarters of an apple. Ask the child, how much of an apple two quarters are?

Digitized by Google

This will teach him that a half and two quarters are the same quantity.

8. If fifteen apples are divided between four boys how many apples will each have?

The child will give three whole apples to each boy, and there will be three apples left to be divided between the four boys. You have already seen that one apple divided among four will give one quarter to each, another apple will give another quarter to each boy, and the third apple will give another quarter, so that, besides the three whole apples, there will be three quarters of an apple for each boy.

9. Divide seventeen apples between four boys and how many will each have?

10. Four boys wish to divide eighteen oranges between them, how must they do it, and how many oranges will each have?

11. If you wish to put nineteen pounds of butter into four boxes, how many pounds must

Digitized by Google

be put into each, to have as much in one as in another?

12. Divide 14 dollars between four men.

13. A father gave 15 apples to four of his children. How many apples did each have?

14. Four boys found eighteen dollars, and without trying to find the owner, as good boys would have done, they shared the money equally. How many dollars did each boy have?

LXIX

1. If a pound of sugar cost eight cents, what will half a pound cost? what will a quarter of a pound cost?

2. If a loaf of bread weigh 12 ounces, what will one half as large weigh? what will one a quarter as large weigh?

3. If a pound of sugar cost eight cents, how much will a pound and a half cost? how much will a pound and a quarter cost?

4. If a pound of coffee cost eight cents, how much will a quarter of a pound cost?

Digitized by Google

Two quarters or a half? three quarters? a pound and a quarter? a pound and two quarters, or a half? a pound and three quarters? two pounds?

5. If a quarter of a pound of almonds cost four cents, how much will two quarters or half a pound cost? how much will three quarters cost? how much will a whole pound cost? how much will a pound and a quarter cost?

6. If a quart of beer cost ten cents, what will half a quart or a pint cost? what will a quart and a half cost? what will two quarts cost?

7. If a gallon of wine cost one dollar, what will half a gallon cost? what will a quarter of a gallon cost? what will a gallon and a half cost? what will six gallons cost? what will twelve gallons cost?

8. A boy is eight years old, how old will he be when he is as old again as he is now? how old will he be when he is half as old again?

Digitized by Google

PART III.

By this time if the child has not learned to count as far as one hundred, he may be taught by the same method pursued with the two first tens, which, in short, is this. Lay ten beans on the table, and then ten more separately, the child knows that these two tens make *twenty*. Then lay down one bean towards a new ten, and call it two tens and one, or twenty one, and so on till you have laid down another ten, when you will say, there are three tens or *thirty*. Keep the tens separate, and go on to forty, &c. As the child has nothing to learn but the names of the *tens*, he may be taught to say the following table.

Ten single things are one ten.
Two tens are twenty.
Three tens are thirty.
Four tens are forty.

Digitized by Google

Five tens are fifty.
Six tens are sixty.
Seven tens are seventy.
Eight tens are eighty.
Nine tens are ninety.
Ten tens are a hundred.

Then for the sake of exercise ask the following questions.

LXX.

1. Two tens and three tens are how many tens? Let the child say five tens or fifty.
2. Three tens and four tens are how many?
3. Four tens and two tens are how many?
4. Five tens and four tens are how many?
5. Six tens and two tens are how many?
6. Seven tens and three tens are how many?
7. Eight tens and two tens are how many?
8. Nine tens and one ten are how many?
9. Take two tens from ten tens or a hundred and how many tens will be left?
10. Take three tens, four tens, five tens, six tens, seven tens, eight tens, nine tens, from a

Digitized by Google

hundred or ten tens, and how many tens will be left.

11. Ten cents and twenty cents are how many cents?

12. Twenty cents and thirty cents are how many cents?

13. Thirty cents and ten cents are how many cents?

14. Forty cents and fifty cents are how many cents?

15. Fifty cents and forty cents are how many cents?

16. Sixty cents and forty cents are how many cents?

17. Seventy cents and twenty cents are how many cents?

18. Eighty cents and twenty cents are how many cents?

19. Ninety cents and ten cents are how many cents?

Digitized by Google

LXXI.

MONEY.

Ten milles make one cent.

Ten cents make one dime.

Ten dimes make one dollar.

Ten dollars make one eagle.

This is the currency authorized by the laws of the United States, but children seldom hear of milles, dimes or eagles. Therefore the following table will also be useful.

Twenty-five cents make one quarter of a dollar.

Fifty cents make two quarters or half a dollar.

Seventy-five cents make three quarters of a dollar.

One hundred cents make one dollar.

Coins of the above value should be shown to the children. As there are other coins currently passed in this country, the child should learn the following table, and be shown the several coins.

Digitized by Google

A *four pence half-penny* is worth six cents and a quarter.

A *nine pence* is worth two four pence half-pennies or twelve and two quarters (or a half) cents.

A *pistareen* is worth twenty cents.

A *half pistareen* is worth ten cents.

LXXII.

1. How many milles are there in one cent? two? three? four? five? six? seven? eight? nine cents?

Answer, as many times ten milles as there are single cents.

2. How many cents are there in one dime? two? three? four? five? six? seven? eight? nine dimes?

Answer, as many times ten cents as there are single dimes.

3. How many dimes are there in one dollar? two? three? four? five? six? seven? eight? nine dollars?

Digitized by Google

Answer, as many times ten dimes as there are single dollars.

4. How many dollars are there in one eagle? two? three? four? five? six? seven? eight? nine? eagles?

Answer, as many times ten dollars as there are single eagles.

LXXIII.

1. How many cents are two four pence half-pennies?

2. How many cents are two nine pences?

3. How many nine pences make a quarter of a dollar?

4. How many four pence half-pennies make a quarter of a dollar?

5. If two nine pences make one quarter of a dollar, how many make two quarters or half a dollar? three quarters of a dollar? how many nine-pences make a dollar?

6. How many four pence half-pennies are in one nine pence? How many in a quarter of a

Digitized by Google

dollar? in a half dollar? in three quarters of a dollar? How many are in a dollar?

7. Which is the most a dime or a half pistareen?

8. How many dimes are in a pistareen?

9. How many cents are in a pistareen?

10. How many dimes or half pistareens make half a dollar? How many make a dollar?

11. How many pistareens make a dollar?

12. How many cents are in two pistareens? in three? in four? in five?

LXXIV.

1. An Eagle is how many dollars?

2. A half Eagle is how many dollars?

3. Three half eagles are how many dollars?

4. A dollar is how many dimes? how many pistareens? how many half dollars? how many quarters? how many nine pences? how many four pence half-pennies?

5. How many half dollars are there in one dollar? two? three?

Digitized by Google

6. How many quarters of a dollar are there in one? two? three? four? five dollars?

7. How many cents are there in one four pence half-penny? two? three? four?

8. How many cents are there in one nine pence? two? three? four? five? six? seven? eight?

9. How many nine pences are there in a half dollar? how many in a dollar? then what part of a dollar is a nine pence?

10. How many four pence half-pennies are in a half dollar? are in a dollar? then what part of a dollar is a four pence half-penny?

LXXV.

1. If I buy a book for nine pence and give the bookseller a quarter of a dollar, how many cents must he give me in change?

2. If I buy two pictures at a pistareen a piece, and give a half a dollar, how much must I receive back in change?

3. If a pound of butter cost thirty cents and I give two quarters of a dollar, what change must I have back?

Digitized by Google

4. If a book cost sixty cents, how much less than a dollar is that?

5. I buy eight pies at a dime a piece and give the pie seller a dollar; how many cents must he give me back?

6. If you are to have nine pence a week, in how many weeks will you have three quarters of a dollar?

7. If a labouring man can earn twenty cents an hour, how long will it take him to earn a dollar? how much will he earn in six hours?

LXXVI.

TIME.

Sixty seconds make one minute.

Sixty minutes make one hour.

Twenty-four hours make one day.

Three hundred and sixty-five days make one year.

Seven days make one week.

Fifty-two weeks make one year.

Twelve months make one year.

Digitized by Google

Names of the days of the week in their order. Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday.

Names of the months in their order.

1st, January, thirty-one days.
2d, February, twenty-eight days.
3d, March, thirty-one days.
4th, April, thirty days.
5th, May, thirty-one days.
6th, June, thirty days.
7th, July, thirty-one days.
8th, August, thirty-one days.
9th, September, thirty days.
10th, October, thirty-one days.
11th, November, thirty days.
12th, December, thirty-one days.

The number of days in each month may be found in the above table, but will be better recollected in the following rhyme,

Thirty days hath September,
June, April and November;
All the rest have thirty-one,

Digitized by Google

Excepting February alone;
Which hath twenty eight, nay more,
Hath twenty nine, one year in four.

LXXVII.

1. How many minutes are in an hour? how many in half an hour? how many in a quarter of an hour? how many in three quarters of an hour?

2. How many hours in a day? how many in half a day? how many in two days?

3. How many days in a week? in two weeks? in three weeks? in four weeks?

4. How many weeks in a year? in half a year? in a quarter of a year?

5. If a man earns a dollar a day, how much will he earn in a week? how much in two weeks? three weeks? four weeks?

6. If a man earn ten dollars a month, how many dollars will he earn in two months? three months? four? five? six? If he earns so much in six months, or half a year, how much will he earn in a year?

Digitized by Google

WEIGHT.

LXXVIII.

Sixteen drams make one ounce.

Sixteen ounces make one pound.

Twenty-eight pounds make one quarter of a hundred weight.

Four quarters make one hundred weight.

Twenty hundred weight make one ton.

1. A pound is sixteen ounces, how many ounces are half a pound? how many a quarter? how many two pounds? how many a pound and a half?

2. If a pound of sugar cost sixteen cents, how much is that an ounce? how much for half a pound? how much for a quarter? how much for two pounds?

LIQUID MEASURE.

LXXIX.

Four gills make one pint.

Two pints make one quart.

Four quarts make one gallon.

Thirty-one and a half gallons make one barrel.

Digitized by Google

Two barrels, or sixty-three gallons, make one hogshead.

Two hogsheads make one pipe.

Two pipes make one tun.

1. If four gills make a pint, how many gills will make two pints or a quart?

2. If eight gills make one quart, how many gills will make four quarts or a gallon?

3. How many pints are in a quart? how many in two quarts? in three? how many in four quarts or a gallon?

4. How many gills are in a pint? in a quart? in a gallon? in half a gallon?

5. If a gill of rum cost two cents what will four gills or a pint cost? eight gills or a quart? what will thirty two gills or a gallon cost?

6. If a gallon of molasses cost thirty-two cents, how much will half a gallon cost? how much will a quart or quarter of a gallon cost? how much will three quarts cost? how much will half a quart or pint cost? how much will a gill cost?

Digitized by Google

LXXX.

Ten tenths make one inch.*
Twelve inches make one foot.
Three feet make one yard.
Five and a half yards make one rod.
Forty rods make one furlong.
Eight furlongs make one mile.
Three miles make one league.

1. In one inch how many tenths? how many in two inches? three? four? five?

2. In one inch how many halves? how many quarters?

3. How many halves in 2 inches? in 3?

4. How many quarters in 2 inches? in 3?

5. How many inches in a foot? in half a foot? in a quarter of a foot?

6. How many inches in two feet? three feet or one yard?

7. How many feet in 2 yards? 3 yards?

**Note.* Barley corns are never used. Tenths of inches are not generally introduced, but we hope the time is not far distant when decimals will be introduced into this and every other rule.

Digitized by Google

8. If a quarter of a yard cost five dollars, what will a whole yard cost? what will half a yard cost? what will two yards cost?

9. If an inch of oak plank cost two cents, what will a foot of it cost? what will half a foot or six inches cost?

LXXXI.

Two and a quarter inches make one nail.

Four nails or nine inches make one quarter of a yard.

Four quarters make one yard.

1. How many inches are in one nail? how many in two nails? in three nails? in four nails or one quarter of a yard?

2. How many quarters in a yard? how many in half a yard? in a yard and a half? in two yards?

3. If a yard of cloth cost ten dollars, what will half a yard cost? what will a quarter of a yard cost?

4. If a quarter of a yard of muslin cost ten cents, what will half a yard cost? what will a

Digitized by Google

whole yard cost? what will two yards cost? what will a yard and a half cost?

5. If it takes three yards and a half of linen to make a shirt, how many yards will it take to make two shirts? to make four shirts?

We have given exercises on the most common rules, and the limits of our little work will not admit of our doing so by the others. As, however, children under seven years of age can easily learn such tables, they are annexed.

ENGLISH MONEY.

4 farthings make 1 penny.
12 pence make 1 shilling.
20 shillings make 1 pound.

DRY MEASURE.

2 pints make 1 quart.
8 quarts make one peck.
4 pecks make 1 bushel.

TROY WEIGHT.

24 grains make 1 pennyw't
20 pennyw't make 1 ounce.
12 ounces make 1 pound.

12 single things, one dozen.
12 dozen make a groce.

24 sheets make a quire.
20 quires make a ream.
20 things make a score.

The Multiplication Table is inserted because it is the the most useful of all tables, and very young children will learn it without any trouble. In the Monitorial School, the monitor reads over the first row of figures two or three times a day, until the little class can say it after her. She then takes three times, and does the same, letting the class sometimes answer separately and sometimes all together.

Digitized by Google

twice 1 are 2
twice 2 are 4
twice 3 are 6
twice 4 are 8
twice 5 are 10
twice 6 are 12
twice 7 are 14
twice 8 are 16
twice 9 are 18
twice 10 are 20
twice 11 are 22
twice 12 are 24

3 times 1 are 3
3 times 2 are 6
3 times 3 are 9
3 times 4 are 12
3 times 5 are 15
3 times 6 are 18
3 times 7 are 21
3 times 8 are 24
3 times 9 are 27
3 times 10 are 30
3 times 11 are 33
3 times 12 are 36

4 times 1 are 4
4 times 2 are 8
4 times 3 are 12
4 times 4 are 16
4 times 5 are 20
4 times 6 are 24
4 times 7 are 28
4 times 8 are 32
4 times 9 are 36
4 times 10 are 40
4 times 11 are 44
4 times 12 are 48

5 times 1 are 5
5 times 2 are 10
5 times 3 are 15
5 times 4 are 20
5 times 5 are 25
5 times 6 are 30
5 times 7 are 35
5 times 8 are 40
5 times 9 are 45
5 times 10 are 50
5 times 11 are 55
5 times 12 are 60

6 times 1 are 6
6 times 2 are 12
6 times 3 are 18
6 times 4 are 24
6 times 5 are 30
6 times 6 are 36
6 times 7 are 42
6 times 8 are 48
6 times 9 are 54
6 times 10 are 60
6 times 11 are 66
6 times 12 are 72

7 times 1 are 7
7 times 2 are 14
7 times 3 are 21
7 times 4 are 28
7 times 5 are 35
7 times 6 are 42
7 times 7 are 49
7 times 8 are 56

Digitized by Google

7 times 9 are 63
7 times 10 are 70
7 times 11 are 77
7 times 12 are 84

8 times 1 are 8
8 times 2 are 16
8 times 3 are 24
8 times 4 are 32
8 times 5 are 40
8 times 6 are 48
8 times 7 are 56
8 times 8 are 64
8 times 9 are 72
8 times 10 are 80
8 times 11 are 88
8 times 12 are 96

9 times 1 are 9
9 times 2 are 18
9 times 3 are 27
9 times 4 are 36
9 times 5 are 45
9 times 6 are 54
9 times 7 are 63
9 times 8 are 72
9 times 9 are 81
9 times 10 are 90
9 times 11 are 99
9 times 12 are 108

10 times 1 are 10
10 times 2 are 20
10 times 3 are 30
10 times 4 are 40
10 times 5 are 50
10 times 6 are 60
10 times 7 are 70
10 times 8 are 80
10 times 9 are 90
10 times 10 are 100
10 times 11 are 110
10 times 12 are 120

11 times 1 are 11
11 times 2 are 22
11 times 3 are 33
11 times 4 are 44
11 times 5 are 55
11 times 6 are 66
11 times 7 are 77
11 times 8 are 88
11 times 9 are 99
11 times 10 are 110
11 times 11 are 121
11 times 12 are 132

12 times 1 are 12
12 times 2 are 24
12 times 3 are 36
12 times 4 are 48
12 times 5 are 60
12 times 6 are 72
12 times 7 are 84
12 times 8 are 96
12 times 9 are 108
12 times 10 are 120
12 times 11 are 132
12 times 12 are 144

Digitized by Google

MULTIPLICATION TABLE.

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
10	20	30	40	50	60	70	80	90	100	110	120
11	22	33	44	55	66	77	88	99	110	121	132
12	24	36	48	60	72	84	96	108	120	132	144

Digitized by Google

Digitized by Google

Digitized by Google

This book should be returned to the Library on or before the last date stamped below.

A fine is incurred by retaining it beyond the specified time.

Please return promptly.

SEP - 3 '36

CANCELLED

2052757

Digitized by Google

Digitized by Google